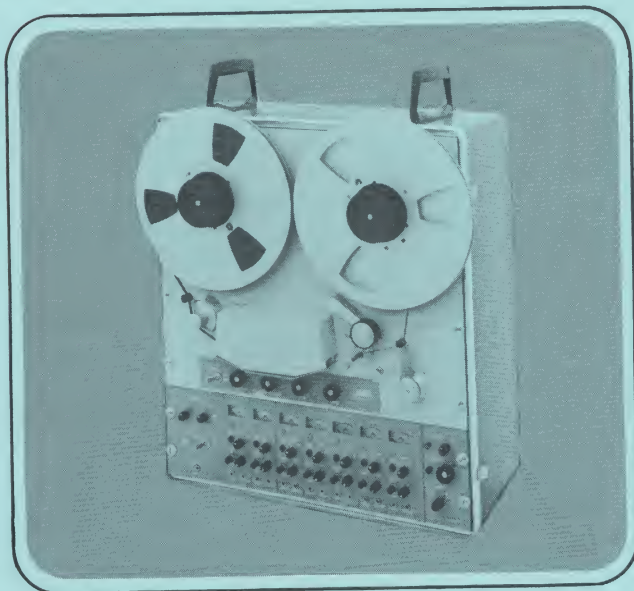


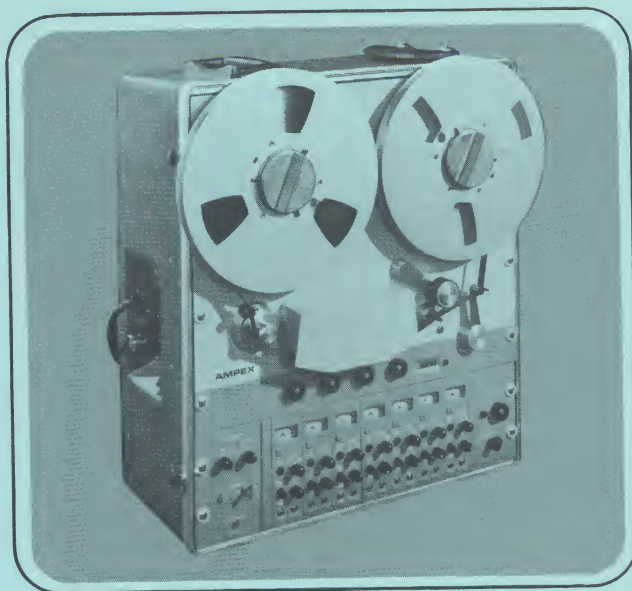
AMPEX SP-300

INSTRUMENTATION RECORDER

$\frac{1}{2}$ -INCH and $\frac{1}{4}$ -INCH VERSIONS



$\frac{1}{4}$ -INCH VERSION



$\frac{1}{2}$ -INCH VERSION (IRIG track dimensions)

PRELIMINARY PERFORMANCE SPECIFICATIONS

General Description

The Ampex SP-300 is a new low cost portable instrumentation recorder designed specifically for industry, science, medicine and education. The $\frac{1}{4}$ -inch version is available with four- or seven-track head configurations, and the $\frac{1}{2}$ -inch version is available with a seven-track head, (IRIG track dimensions), either version with one to seven channels of electronics. Electronics are all-solid state amplifiers each of which contains all circuitry for record/reproduce, and Direct and FM recording techniques. A reel rotation counter is supplied as standard equipment on the $\frac{1}{2}$ -inch version. The $\frac{1}{4}$ -inch version can also be supplied with a reel rotation counter, if desired. For field installation of the counter on earlier models of the $\frac{1}{4}$ -inch version, a kit is available. Full track erase, controlled by a separate front panel control, is provided on the $\frac{1}{4}$ -inch version. The $\frac{1}{2}$ -inch, like all IRIG recorders, does not include an erase head.

Features

Direct, FM and Audio Recording: Combined all-solid-state circuitry offers pushbutton selection of either Direct or FM recording and, by an internal jumper connection, audio recording.

Four Speeds: Tape speeds of $1\frac{1}{8}$ to 15 ips provided, all electrically switched by one front panel control.

Data Channels: Provides up to 7 channels of recording.

Electrically Switched Amplifiers: Each amplifier contains equalizers and frequency determining units for all tape speeds, electrically switched by the tape speed control; no plug-ins are required.

Built-in Calibration: Choice of four calibration voltages, positive or negative DC or AC.

Individual Channel Meters: Visual monitoring of all channels on both record or reproduce is provided by means of individual channel meters. The meters are also used for calibration.

Erase Head: Erases all tracks simultaneously, eliminating the need for a separate degausser ($\frac{1}{4}$ -inch only).

Ease of Operation: All controls are on the front panel, in easily accessible, logical groupings. Operation is simple and straightforward; highly skilled electronic personnel are not required.

Portable: Measures only $22\frac{1}{2} \times 13\frac{1}{2} \times 20$ inches; weight, approximately 90 pounds.

Proven Transport: The SP-300 incorporates the most thoroughly proven and reliable of all professional transports. Over 10,000 similar units in use in broadcasting stations and recording studios throughout the world.

Tape Transport

Tape Speeds: 15, $7\frac{1}{2}$, $3\frac{3}{4}$, $1\frac{1}{8}$ ips standard, electrically switchable. The transport speed switch automatically selects the proper equalization or frequency determining network for each tape speed.

Tape Speed Deviation: $\pm 0.2\%$ at 15 and $7\frac{1}{2}$ ips.
 $\pm 0.4\%$ at $3\frac{3}{4}$ and $1\frac{1}{8}$ ips.

Reels: The SP-300 tape transport accommodates either $10\frac{1}{2}$ -inch NAB reels or 7-inch plastic reels for $\frac{1}{4}$ -inch version; $10\frac{1}{2}$ -inch NAB reels for $\frac{1}{2}$ -inch version.

Tape Transport (continued)

Tape Specifications: 1 mil or 1½ mil polyester or acetate base. Type 631 tape is recommended for optimum performance. Stated performance is guaranteed only when using Ampex Tape.

Controls: Record, Play, Stop, Fast Forward, Rewind, Power, Reel Size and Erase (¼-inch only), Speed, Calibration Voltage, Meter Function, FM/Direct, Input Level.

Fast Wind Time: For 7-inch reel with 1800 feet of tape, approximately 1 minute. For 10½-inch reels, with 3600 feet of tape, approximately 1½ minutes.

Heads

Track Dimensions: ¼-inch version: track width is 0.024 inch (0.061 cm); 4-channel track spacing 0.070 inch (0.168 cm) on center; 7-channel track spacing 0.035 inch (0.084 cm) on center.

½-inch version: track width is 0.050 inch; tape track spacing is 0.070 inch on center (IRIG Standard).

Number of Tracks: Up to 7 on ¼-inch or ½-inch version.

Interstack Spacing: 17/32 inch (3.09 cm) nominal (¼-inch). 1½ inch (3.81 cm) ±0.0005 (±0.00127 cm) (½-inch).

Direct Record/Reproduce System

Frequency Response:	Bandwidth	Band Pass
Tape Speed	Instrumentation *	S/N (RMS signal to RMS noise)
15 ips	50 to 40,000 cps ±3 db	30 db
7½ ips	50 to 20,000 cps ±3 db	30 db
3¾ ips	50 to 10,000 cps ±3 db	30 db
1⅞ ips	50 to 5,000 cps ±3 db	30 db

*Audio equalization available by jumper connection.

Input Level: 1.0 volt rms nominal (0 dbv) to produce normal recording level; adjustable from 0.5 to 10 volts rms by input potentiometer.

Input Impedance: Minimum 10,000 ohms resistive, unbalanced to ground.

Output Level: 1 volt rms nominal (0 dbv), DC coupled (capable of delivering 20 ma into short-circuit load).

Output Impedance: 100 ohms, ±20%, unbalanced to ground.

FM Record/Reproduce System

Frequency Response:	Frequency Response	RMS	Total Harmonic
Tape Speed	(±1 db)	S/N Ratio	Distortion
15 ips	0 to 2,500 cps	35 db	1.5%
7½ ips	0 to 1,250 cps	38 db	1.5%
3¾ ips	0 to 625 cps	38 db	1.5%
1⅞ ips	0 to 312 cps	38 db	1.5%

DC Drift: Less than ±1.0% of full deviation over an 8 hour period, ambient temperature and line voltage constant, after 1 hour initial warmup.

Record/Reproduce Voltage Linearity: ±1.0% of full band (best straight line).

Input Level: Input of 1 volt rms (0 dbv) to produce ±40% deviation; operable from 0.5 to 10 volts rms by adjustment of input potentiometer.

Input Impedance: Minimum 10,000 ohms, unbalanced to ground.

Output Level: 1 volt rms nominal (0 dbv), DC coupled (capable of delivering 20 ma into short-circuit load).

Output Impedance: 100 ohms, ±20%, unbalanced to ground.

Power Requirements

Voltage: 105 to 125 volts, single phase, 60 cps AC. Two universal voltage models: 90 to 130 volts or 200 to 240 volts, 50 cps AC; or 90 to 130 volts or 200 to 240 volts, 60 cps AC.

Power Consumption: ¼-inch version: approx. 250 watts.
½-inch version: approx. 300 watts.

Environment (Preliminary)

Temperature: Operating: -1 to 44°C (30 to 110°F).
Non-operating: -24 to 55°C (-10 to 130°F)

Relative Humidity: 0 to 85% without condensation.

Physical Characteristics

Portable Case: 22½ inches high (57.15 cm), by 20 inches wide (50.80 cm), by 13½ inches deep (34.29 cm).

Vertical Rack Space Required: 21 inches (53.34 cm). May be removed from case and mounted in 19-inch rack.

Weight: ¼-inch version: approx. 90 lbs. (40.99 kg).
½-inch version: approx. 105 lbs. (45.20 kg).

METRIC CONVERSION TABLES

Applicable to all Ampex recorders—specific items may not apply to the unit described in this sheet.

TAPE SPEEDS

ips	1¼	3¾	7½	15	30	60	120
cm/sec	4.76	9.52	19.05	38.1	76.2	152.4	304.8

TAPE DIMENSIONS

Reels: inches	14	10½	7	5¾	5
cm	35.56	26.67	17.78	14.62	12.70

Widths: inches	1¼	½	¾	1	2
cm	0.635	1.27	1.905	2.54	5.08

Base Thicknesses: inches	1 mil	1.5 mil
mm	0.0254	0.0381

Lengths: feet	600	1200	1800	2500	3600	5000	7200	9600
meters	185	366	549	762	1097	1524	2195	2926

HEAD DIMENSIONS

Gap Scatter	Interstack Spacing*	Track Width & Spacing*
microinches	inches 1.5 ±0.0005	inches 0.050 0.070
mm	cm 3.81 ±0.00127	mm 1.27 1.778

*(IRIG)

STANDARD PANELS FOR 19-INCH (48.26 cm) RACK

inches	1¼	3½	5¼	7	8¾	12¼	14	15¾	17½	19¼	21	35
cm	4.45	8.89	13.34	17.78	22.23	31.12	35.56	40.01	44.45	48.9	53.34	88.9

TYPICAL PRICES*

4-Channel ¼ inch version	\$4990
7-Channel ¼ inch version	\$6950
7-Channel ½ inch (IRIG) version	\$8450

*Prices are FOB Redwood City, California, U.S.A. Overseas prices available from Ampex specialist in your area.

AMPEX

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